

Technical Report 05-11

GRAS SAF Open Loop Workshop

6-8 June 2005, Helsingør, Denmark

K. B. Lauritsen and F. Rubek (editors)





Colophon

Serial title:

Technical Report 05-11

Title:

GRAS SAF Open Loop Workshop

Subtitle:

Author(s):

Kent B. Lauritsen, Frans Rubek (editors)

Other contributors:

see chapter on presentations

Responsible institution:

Danish Meteorological Institute

Language:

English

Keywords:

Radio occultation, open loop, raw sampling mode, GRAS SAF, GPS, numerical weather prediction

URL:

<http://www.dmi.dk/dmi/dmi-publikationer.htm>

ISSN:

1399-1388

Version:

DMI website:

<http://www.dmi.dk>

Copyright:

Danish Meteorological Institute



Content:

1. Preface.....	4
2. Program.....	5
3. Presentations	8
4. Participants.....	9
5. Previous reports	10



1. Preface

The GRAS SAF Open Loop Workshop was held at the LO-Skolen conference center in Helsingør, Denmark on June 6-8 2005, and was organised by the GRAS SAF team at the Danish Meteorological Institute (DMI). The aim of the workshop was to bring together the people designing and constructing the GRAS Instrument for Metop (ESA, Saab Ericsson Space, EUMETSAT) and scientists working with GPS receivers and tracking modes in order to exchange ideas, results, and information related to the open loop operation of the GRAS Instrument.

In the present report we enclose all the presentations made at the workshop. We believe we had a very interesting and successful workshop, giving rise to many fruitful scientific discussions.

Finally, we would like to thank EUMETSAT for the financial support that made this workshop possible.

Kent B. Lauritsen
GRAS SAF Project Manager, DMI

<http://grassaf.dmi.dk/golw>

2. Program

Monday June 6, 2005:

13.00 – 17.00 Registration

17.00 – 18.00 Session 1: Opening and Welcome
Chairman: Kent B. Lauritsen

The GRAS SAF Project and Aim of the Workshop
by Kent B. Lauritsen (GRAS SAF Project Manager, DMI)

Satellite and Space Research Activities at DMI
by Georg B. Larsen (head of Atmosphere Space Research Division, DMI)

GRAS SAF Open Loop Status and Plans
by Antonio Rius (GRAS SAF team, IEEC)

18.00 – 19.00 Reception

19.00 Dinner

Tuesday June 7, 2005:

7.30 – 9.00 Breakfast

9.00 – 10.40 Session 2
Chairman: Kent B. Lauritsen

General GRAS Receiver Overview
by Magnus Bonnedal (SES)

GRAS Open Loop Tracking
by Jacob Christensen (SES)

10.40 – 11.00 Coffee break

11.00 – 12.00 Session 3
Chairman: Georg B. Larsen

Open Loop and GRAS Ground Processing Prototype
by Marc Loiselet (ESA)

On-Ground Demodulation of Navigation Data Bits in GRAS Open Loop Data

by Carmelo Carrascosa (GMV)

12.00 – 13.30 Lunch

13.30 – 15.10 Session 4

Chairman: Antonio Rius

GRAS Test Results, including Maui Mission Results

by Anders Carlström (SES)

Ocean Reflection Interference in Low Elevation GPS Measurements

by Laust Olsen (AAU)

Interferometry with GPS Low Earth Orbiters Occultations

by Estel Cardellach (GRAS SAF Team, IEEC)

15.10 – 15.40 Coffee break

15.40 – 17.50 Session 5

Chairman: Frans Rubek

Atmospheric Multipath Tests

by Magnus Bonnedal (SES)

Radio Holographic Filtering and Error Estimation of Radio Occultation Data

by Michael Gorbunov (IAP, GRAS SAF visiting scientist)

Tracking GPS Radio Occultation Signals in the Lower Troposphere: CHAMP Observations and Simulation Studies

by Georg Beyerle (GFZ, GRAS SAF visiting scientist)

Information Content of Radio Occultation Soundings in the Troposphere: Results and Implications for Data Processing

by Christian Marquardt (GRAS SAF Team, Met Office)

18.00 Dinner

Wednesday June 8, 2005

7.30 – 9.00 Breakfast



9.00 – 10.00 Session 6
Chairman: Christian Marquardt

Removal of the Navigation Signal using GOLD_RTR
by Antonio Rius (GRAS SAF team, IEEC)

**The OAT Software and the Experimental Open Loop Processing of
CHAMP and SAC-C Data**
by Josep Aparicio (GRAS SAF associate, IEEC)

10.00 – 10.20 Coffee break

10.20 – 12.00 Session 7
Chairman: Georg B. Larsen

GRAS In-Orbit Verification
by Marc Loiselet (ESA)

EUMETSAT Plans for GRAS Raw Sampling (Open Loop) Data
by Juha-Pekka Luntama (GRAS Mission Scientist, EUMETSAT)

MATH: Monitoring Atmosphere Turbulence and Humidity
by Per Høeg (AAU)

Discussion and future plans, end of workshop

12.00 Lunch



3. Presentations

4. Participants

Josep Aparicio	IEEC/MSC	Spain/Canada	josep.aparicio@ec.gc.ca
Hans-Henrik Benzon	DMI	Denmark	hhb@dm.dk
Georg Beyerle	GFZ Potsdam	Germany	gbeyerle@gfz-potsdam.de
Magnus Bonnedal	SAAB Ericsson Space	Sweden	magnus.bonnedal@space.se
Estel Cardellach	IEEC	Spain	estel@ieec.fcr.es
Anders Carlström	SAAB Ericsson Space	Sweden	anders.carlstrom@space.se
Carmelo Carrascosa	GMV	Spain	ccarrascosa@gmv.es
Jacob Christensen	SAAB Ericsson Space	Sweden	jacob.christensen@space.se
Axel von Engeln	Met Office	United Kingdom	axel.vonengeln@metoffice.gov.uk
Hans Fritz	SAAB Ericsson Space	Sweden	hans.fritz@space.se
Hans Gleisner	DMI	Denmark	hgl@dm.dk
Michael Gorbunov	IAP	Russia	gorbunov@dkrz.de
Per Høeg	Aalborg University	Denmark	hoeg@kom.aau.dk
Nanna B. Karlsson	DMI	Denmark	nbk@dm.dk
Georg B. Larsen	DMI	Denmark	gbl@dm.dk
Kent B. Lauritsen	DMI	Denmark	kbl@dm.dk
Marc Loiselet	ESA/ESTEC	international	marc.loiselet@esa.int
Armin Löscher	DMI	Denmark	arl@dm.dk
Juha-Pekka Luntama	EUMETSAT	international	juha-pekka.luntama@eumetsat.int
Christian Marquardt	Met Office	United Kingdom	christian.marquardt@metoffice.gov.uk
Oleguer Nogues	IEEC	Spain	nogues@ieec.fcr.es
Laust Olsen	Aalborg University	Denmark	lao@kom.aau.dk
Inge S. Primdahl	DMI	Denmark	isp@dm.dk
Antonio Rius	IEEC	Spain	rius@ieec.fcr.es
Frans Rubek	DMI	Denmark	frr@dm.dk
Pierluigi Silverstrin	ESA/ESTEC	international	Pierluigi.silverstrin@esa.int
Martin B. Sørensen	DMI	Denmark	mbs@dm.dk
Franz Zangerl	Austrian Aerospace	Austria	franz.zangerl@space.at



5. Previous reports

Previous reports from the Danish Meteorological Institute can be found on:
<http://www.dmi.dk/dmi/dmi-publikationer.htm>